

## KNICKERBOCKER ROUTE

### APPENDIX B – VISUAL RESOURCE ASSESSMENT REPORT

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March 2, 2015



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## Knickerbocker Route

### Appendix B - Visual Resource Assessment Report

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*\*Cover images represent existing and proposed Project conditions.*

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## A. INTRODUCTION

NextEra Energy Transmission New York, Inc. (NEETNY) has filed a Part A Application for a Certificate of Environmental Compatibility and Public Need pursuant to Article VII of the Public Service Law to construct a 345kV, single circuit transmission line extending approximately 62 miles from the Knickerbocker Substation (Town of East Greenbush, Rensselaer County) to the Pleasant Valley Substation (Town of Pleasant Valley, Dutchess County) (hereafter referred to as the “Knickerbocker Route” or the “Project”).

The following report provides additional information concerning potential impact of the Project on visual resources. Consistent with the State of New York Public Service Commission Order Establishing Modified Procedures for Comparative Evaluation, issued on and effective December 16, 2014 (referred to as the “December 2014 Order”), this summary report includes:

- > Quantitative Impact Analysis
  - Viewshed mapping within three (3) miles of the Project centerline (“Study Area”). The Study Area is extended to five (5) miles wide where the project centerline is within five (5) miles of a New York State Department of State Scenic Area of Statewide Significance (“designated SASS”).
  - Inventory of visual resources within the Study Area.
- > Analysis of potential impacts
  - Analysis of impacted visual resources.
  - Assess the degree of project visibility.
  - Assess the probable extent of visual contrast change from existing conditions.
  - Assessment of visual contrast based on photo simulations depicting facility appearance from representative receptor locations.
- > Description of mitigation measures appropriate to minimize adverse visual impacts.

### 1. Project Description

The Project proposes to construct a 62-mile long overhead transmission line within an existing transmission right-of-way (ROW). The Knickerbocker Route originates at the existing Greenbush Substation (Town of East Greenbush, Rensselaer County) and travels southwest approximately 8 miles to the new Knickerbocker substation. Along this segment the Project will replace an existing 115kV transmission line (80-foot tall steel lattice frame towers) with 80-foot tall gray colored concrete monopole structures with braced polymer post insulators.

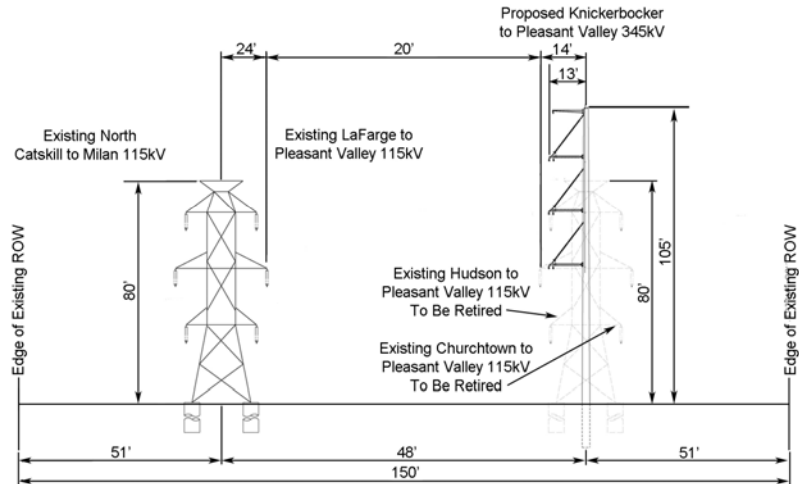
From the new Knickerbocker Switchyard, the proposed 115kV/345kV transmission line will continue south within an existing transmission ROW for approximately 22 miles to the new North Churchtown Switchyard (Town of Claverack, Columbia County). From the new North Churchtown Switchyard the proposed 345kV transmission line will continue for south within an existing transmission ROW approximately 31 miles to the existing Pleasant Valley Substation. Along this segment the Project will replace existing 80-foot tall steel lattice frame towers with 105-foot tall gray colored concrete monopole structures with braced polymer post insulators.

The entire length of the Greenbush to Pleasant Valley segment is within an existing transmission ROW containing adjacent to various existing transmission lines with differing tower types ranging in height from 80 to 90 feet.

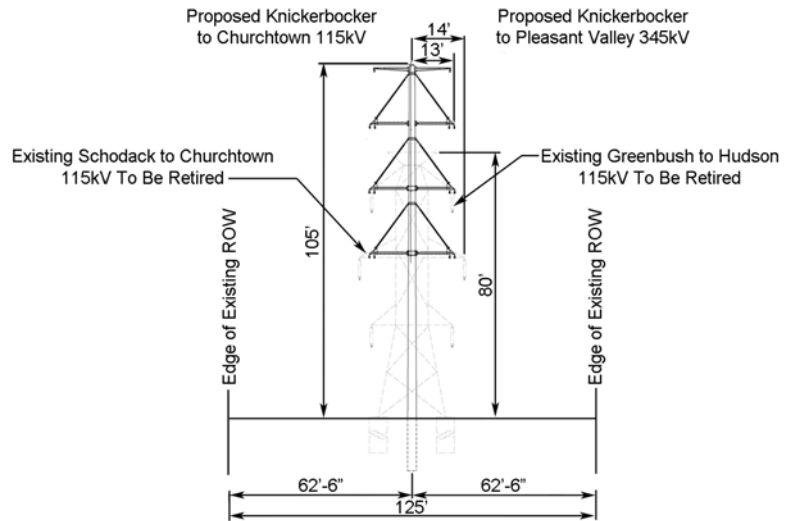
Since this segment of the proposed Project will replace existing structures, additional vegetative clearing is not necessary. The clearing will be maintained as a shrub habitat or other low-growing vegetation types.

At all ends of the route, the proposed transmission line will terminate at dead end structures adjacent to existing substations. Detailed design of interconnections will be determined during the New York Independent System Operator, Inc. (NYISO) review process.

Illustrations of typical ROW configurations for all Project segments are provided in the Marcy/Edic to Pleasant Valley Project, Article VII Part A Supplemental Application, Exhibit 5.



Typical ROW Cross-Section for 24 of the 62 Proposed Miles  
Image Credit: Sargent & Lundy, LLC



Typical ROW Cross-Section for 22 of the 62 Proposed Miles  
Image Credit: Sargent & Lundy, LLC

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## B. VISUAL RESOURCE ANALYSIS

### 1. Quantitative Impact (Degree of Project Visibility)

#### a) Viewshed Analysis

A series of preliminary vegetated viewshed maps were prepared identifying the geographic area within which the proposed transmission towers would be theoretically visible. The viewshed was calculated using the high point of each of the proposed transmission structures with an assumed height of 105 feet throughout. The viewshed area under study was specified to extend three (3) miles on either side of the proposed Project centerline and extend to five (5) miles wide where the project is within five (5) miles of a designated SASS. Viewshed analysis includes the screening value of both intervening landform and vegetation.

ArcGIS 9.3 and ArcGIS Spatial Analyst software were used to generate viewshed areas based on publicly available digital topographic and land cover datasets. Topographic data was derived from a 30-meter resolution digital elevation model (DEM) acquired from the United States Geological Survey National Elevation Dataset (NED). Forest cover data was extracted from the 30-meter resolution National Land Cover Data Set 2001 (NLCD) Percent Tree Canopy dataset. The screening effect of vegetation was incorporated by adding 40 feet (12.2 meters) of height to DEM grid cells that are forested (>50 percent canopy closure).

It is important to note that the NLCD dataset is based on interpretation of forest areas that are clearly distinguishable using multi-spectral satellite imagery. As such, the potential screening value of site-specific vegetative cover such as small hedgerows, street trees and individual trees and other areas of non-forest tree cover may not be represented in the viewshed analysis. Furthermore, the NLCD dataset does not include the screening value of existing structures. This is a particularly important distinction in the populated areas where existing structures are likely to provide significant screening of distant views. With these conditions, the viewshed map conservatively overestimates potential Project visibility in areas where the Project may be substantially screened from view.

To account for vegetative clearing within the existing transmission corridor, forest cover data was clipped to the edge of the cleared corridor (actual clearing may not exceed 54 feet) based on air photo interpretation. A conservative offset of two (2) meters was applied to the calculation to account for the observer's eye level. The computer then scanned the forest adjusted DEM to identify grid cells with a direct line-of-sight to one or more of the proposed towers.

Affected grid cells are coded based on the number of proposed structures visible. Cumulative visibility is summarized using the following groupings<sup>1</sup>:

- > 1-3 structure visible;
- > 4-6 structures visible;
- > 7-9 structures visible;
- > 10-12 structures visible;
- > 13-15 structures visible;
- > 16-18 structures visible; and
- > 19 or more structures visible.

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<sup>1</sup> Cumulative visibility is limited to a distance of five (5) miles from the subject tower. Beyond this distance it is assumed that natural conditions of atmospheric and linear perspective will significantly mitigate most visual impacts.

Viewshed maps are provided in Appendix A.

Table 1 summarizes the degree of theoretical project visibility as illustrated on the viewshed maps (Appendix A) within the Study Area.

Viewshed analysis indicates that one or more of the proposed Knickerbocker to Pleasant Valley structures will be visible from approximately 23 percent of the Study Area. Approximately 77 percent of the Study Area will likely have no visibility of any proposed structures due to intervening landform or vegetation.

Structure visibility is most common within the cleared transmission corridor and from agricultural areas where cleared lands provide long vistas in the direction proposed Project. It should be noted that due to the scale of the viewshed maps (contained in Appendix A) and graphic representation of the centerline, visibility in the cleared transmission ROW might be obscured.

**Table 1 – Degree of Project Visibility Based on Viewshed Analysis**

Number of Structures Visible	Affected Acreage	Percent of Study Area
None	272,416	76.9%
1 - 3	19,040	5.4%
4 - 6	13,402	3.8%
7 - 9	10,453	3.0%
10 - 12	8,214	2.3%
13 - 15	6,286	1.8%
16 - 18	4,974	1.4%
19 or more	19,235	5.4%
Total	354,020	100.0%

Viewshed analysis was not conducted for existing transmission structures. It is likely that the area affected by the proposed 105-foot tall Project towers that replace existing 80-foot tall towers would be similar.

**b) Aesthetic Resource Analysis**

A preliminary inventory of visually sensitive places was completed based on guidelines established in the New York State Department of Environmental Conservation Program Policy on Visual Impact Assessment and Mitigation Visual Policy (DEP-00-2). Aesthetic resources of statewide significance are derived from the following categories:

- > National/State Register Site or District
- > State Parks and State Historic Sites
- > National/State Register Eligible Site
- > Heritage Areas (formerly Urban Cultural Parks)
- > State Forest Preserve
- > National Wildlife Refuges
- > State Game Refuges
- > State Wildlife Management Areas
- > National Natural Landmarks
- > National Park Resources (Recreation Areas, Seashores, and Forests)
- > National or State Wild, Scenic, or Recreational Rivers
- > Designated Scenic site, area, lake, reservoir or highway
- > Scenic Areas of Statewide Significance
- > State or federally designated trails
- > Adirondack Park Scenic Vistas
- > State Nature and Historic Preserve Areas
- > Palisades Park
- > Bond Act Properties purchased under Exceptional Beauty or Open Space

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Most aesthetic resources of statewide significance were identified through existing public data sources. Resources considered eligible for listing on the National or State Register of Historic Places (Register Eligible)<sup>2</sup> were inventoried by cultural resource consultant TRC Companies, Inc. (TRC). The location of Register Eligible sites were determined by geo-coding the data by street address. Of the 237 Register Eligible data points identified by TRC as being located within the Study Area, 103 were dropped from further analysis at this time because of missing or incomplete address information. Upon selection of a project by the Commission, NEETNY will consult with the New York State Office of Parks and Recreation (OPRHP) to verify the location of all Register Eligible sites within the Study Area.

Table 2 lists 273 aesthetic resources of statewide significance located within the Study Area. The location of identified aesthetic resources is referenced by numeric code on the viewshed maps provided in Appendix A.

Each inventoried visual resource was plotted on the viewshed maps to determine whether or not a visual impact might exist. Based on viewshed analysis alone, of the 273 inventoried resources the proposed Project may be screened from 155 by intervening landform or vegetation.

Table 2 further identifies visual resources that are potentially affected based on viewshed analysis. The viewshed analysis conservatively overestimates Project visibility within populated areas, to correct this, all visual resources located in urbanized areas more than one (1) mile from the nearest Project structure are classified in Table 2 as “View Unlikely”. Applying this criterion, of the 273 inventoried resources the proposed Project may be visible from 60 resources.

Viewshed analysis was not conducted for the towers currently located within the Project ROW. However, it is likely that most, if not all, aesthetic resources shown by viewshed analysis to be affected by views of the proposed Project towers are currently affected by views of the existing towers being replaced/reconstructed or to remain within the Project ROW.

Approximately two (2) miles of the ROW crosses the Columbia-Greene North Scenic Area of Statewide Significance (CGN-14, Stuyvesant Farms Subunit). Due to foreground vegetation, views of the existing transmission line and proposed Project from locations within the SASS will likely be limited to short segments of two local roads.

No other portion of the ROW falls within a designated SASS. However, the corridor is within five-miles of a SASS for nearly 27 miles of its route.

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<sup>2</sup> Eligible resources were identified using the New York State Parks Cultural Resource Information System (CRIS).

**Table 2 -Visual Resources Inventory – Greenbush to Pleasant Valley Segment**

Map ID	Receptor Name	Municipality	County	Resource Category	Within Project Viewshed	Distance to Nearest Structure (miles)	Maximum Number of Structures Visible	Visibility Class
1	1421 NY 9H	Ghent	Columbia	Ntl./State Register Eligible	Yes	1.1	5	C
2	144 Link Rd	Ghent	Columbia	Ntl./State Register Eligible	No	2.8	0	Not Visible
3	Jacob Rossman Knitting Mill	Ghent	Columbia	Ntl./State Register Eligible	Yes	0.1	3	C
4	360 CR 25	Ghent	Columbia	Ntl./State Register Eligible	Yes	0.1	2	C
5	Stockport Flats	Stockport	Columbia	State Nature Preserve	Yes	1.4	34	C
6	139 Gilligan Rd	Ghent	Columbia	Ntl./State Register Eligible	No	0.2	0	Not Visible
7	Widows Creek Oil Mill	Stockport	Columbia	Ntl./State Register Eligible	Yes	0.3	1	C
8	Eureka Paper Mill	Stockport	Columbia	Ntl./State Register Eligible	No	0.7	0	Not Visible
9	226 Old Post Rd	Ghent	Columbia	Ntl./State Register Eligible	No	1.3	0	Not Visible
10	1060 CR 22	Ghent	Columbia	Ntl./State Register Eligible	Yes	1.6	14	C
11	Ghent Reformed Church	Ghent	Columbia	Ntl./State Register Eligible	No	1.5	0	Not Visible
12	West Ghent Cemetery	Ghent	Columbia	Ntl./State Register Eligible	No	1.5	0	Not Visible
13	1129 CR 22	Ghent	Columbia	Ntl./State Register Eligible	No	2.0	0	Not Visible
14	1185 CR 22	Ghent	Columbia	Ntl./State Register Eligible	No	2.1	0	Not Visible
15	1264 CR 22	Ghent	Columbia	Ntl./State Register Eligible	Yes	2.4	8	C
16	5 Link Rd	Ghent	Columbia	Ntl./State Register Eligible	No	2.5	0	Not Visible
17	349 Old Post Rd	Ghent	Columbia	Ntl./State Register Eligible	No	1.6	0	Not Visible
18	397 Old Post Rd	Ghent	Columbia	Ntl./State Register Eligible	Yes	1.5	22	C
19	Structure	Ghent	Columbia	Ntl./State Register Eligible	No	2.6	0	Not Visible
20	60 Leggett Rd	Ghent	Columbia	Ntl./State Register Eligible	No	2.3	0	Not Visible
21	Basement barn; contributing to NRE farmhouse	Ghent	Columbia	Ntl./State Register Eligible	Yes	1.6	34	C
22	Dairy barn complex	Ghent	Columbia	Ntl./State Register Eligible	No	3.0	0	Not Visible
23	11 Letter S Rd	Ghent	Columbia	Ntl./State Register Eligible	No	2.9	0	Not Visible
24	134 Leggett Rd	Ghent	Columbia	Ntl./State Register Eligible	No	2.3	0	Not Visible
25	365 Old Post Rd	Ghent	Columbia	Ntl./State Register Eligible	Yes	1.5	30	C
26	Related to basement barn	Ghent	Columbia	Ntl./State Register Eligible	Yes	1.5	38	C
27	489 Old Post Rd	Ghent	Columbia	Ntl./State Register Eligible	Yes	1.5	38	C
28	533 Old Post Rd	Ghent	Columbia	Ntl./State Register Eligible	Yes	1.6	52	C
29	97 Quinn Ln	Ghent	Columbia	Ntl./State Register Eligible	No	2.6	0	Not Visible
30	160 Letter S Rd	Ghent	Columbia	Ntl./State Register Eligible	No	2.9	0	Not Visible
31	295 Leggett Rd	Ghent	Columbia	Ntl./State Register Eligible	No	2.1	0	Not Visible
32	House and cemetery	Ghent	Columbia	Ntl./State Register Eligible	No	2.2	0	Not Visible
33	Related to wagon shed	Ghent	Columbia	Ntl./State Register Eligible	No	2.2	0	Not Visible
34	342 Leggett Rd	Ghent	Columbia	Ntl./State Register Eligible	No	2.2	0	Not Visible
35	Crow Hill (Whiting, Charles, Residence)	Kinderhook	Columbia	Ntl./State Register	No	3.0	0	Not Visible
36	First Presbyterian Church	Kinderhook	Columbia	Ntl./State Register	No	3.6	0	Not Visible
37	Wild's Mill Complex	Kinderhook	Columbia	Ntl./State Register	No	3.4	0	Not Visible
38	Wild, Nathan, House	Kinderhook	Columbia	Ntl./State Register	No	3.5	0	Not Visible
39	Kinderhook Village District	Kinderhook	Columbia	Ntl./State Register	Yes	1.9	30	C
40	Wil-Roc Farm, ca. 1825; barn complex	Stockport	Columbia	Ntl./State Register Eligible	Yes	0.3	3	C
41	296 CR 25	Stockport	Columbia	Ntl./State Register Eligible	No	0.7	0	Not Visible
42	Midvale Paper Board Co.	Stockport	Columbia	Ntl./State Register Eligible	No	0.8	0	Not Visible
43	3 Knitt Rd	Stockport	Columbia	Ntl./State Register Eligible	Yes	0.4	23	C
44	George Rossman House	Stockport	Columbia	Ntl./State Register Eligible	No	0.6	0	Not Visible
45	Stockport Flats Wildlife Mgt Area	Stockport	Columbia	State Wildlife Mgt Area	Yes	2.1	2	C
46	Hudson River Islands	Stockport	Columbia	State Park/Historic Site	No	1.6	0	Not Visible
47	520 NY 9J	Stuyvesant	Columbia	Ntl./State Register Eligible	No	1.7	0	Not Visible
48	526 NY 9J	Stuyvesant	Columbia	Ntl./State Register Eligible	No	1.7	0	Not Visible

**Table 2 -Visual Resources Inventory – Greenbush to Pleasant Valley Segment**

Map ID	Receptor Name	Municipality	County	Resource Category	Within Project Viewshed	Distance to Nearest Structure (miles)	Maximum Number of Structures Visible	Visibility Class
49	Columbia - Greene North (CGN) SASS	Stuyvesant	Columbia	SASS	Yes	0.0	75	C
50	Farm	Stuyvesant	Columbia	Ntl./State Register Eligible	No	0.9	0	Not Visible
51	Van Alen, Johannes L., Farm	Stuyvesant	Columbia	Ntl./State Register	Yes	0.1	27	C
52	Mesick Farmhouse	Schodack	Columbia	Ntl./State Register Eligible	No	1.3	0	Not Visible
53	Building Y1 Queen Anne/Col. Revival House	Bethlehem	Albany	Ntl./State Register Eligible	Yes	2.6	40	A
54	Mull House and Cemetery (House)	Coeymans	Albany	Ntl./State Register	No	1.9	0	Not Visible
55	Mull House and Cemetery (Cemetery)	Coeymans	Albany	Ntl./State Register	Yes	1.9	20	A
56	Schodack Island	Schodack	Columbia	State Park/Historic Site	Yes	0.8	3	C
57	Muitzes Kill Historic District	Schodack	Columbia	Ntl./State Register	Yes	1.0	35	C
58	Schodack Landing Historic District	Schodack	Columbia	Ntl./State Register	Yes	0.6	4	C
59	1-Story Masonry Residence	Bethlehem	Albany	Ntl./State Register Eligible	No	2.2	0	A
60	Building C; Gothic Revival Brick Residence	Bethlehem	Albany	Ntl./State Register Eligible	No	2.2	0	A
61	Large brick mid 19th house and barn	East Greenbush	Rensselaer	Ntl./State Register Eligible	Yes	0.2	6	A
62	D Phillips House, early 19th Federal	East Greenbush	Rensselaer	Ntl./State Register Eligible	Yes	0.1	9	A
63	Lustron house, Westchester model	East Greenbush	Rensselaer	Ntl./State Register Eligible	Yes	0.1	11	A
64	Lustron house, Westchester model	East Greenbush	Rensselaer	Ntl./State Register Eligible	Yes	0.1	11	A
65	141 Aiken Ave	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.2	0	Not Visible
66	Onderdonk Residence	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.5	0	Not Visible
67	24 Spruce St	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.4	0	Not Visible
68	24 Ring St	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.4	0	Not Visible
69	1 Grove St	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.4	0	Not Visible
70	Lustron house (1950)	East Greenbush	Rensselaer	Ntl./State Register Eligible	No	2.3	0	Not Visible
71	98 Third Ave	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.5	0	Not Visible
72	121 Third Ave	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.5	0	Not Visible
73	115 Third Ave	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.6	0	Not Visible
74	101 Third Ave	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.6	0	Not Visible
75	95 Third Ave	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.6	0	Not Visible
76	93 Third Ave	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.6	0	Not Visible
77	77 Third Ave	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.6	0	Not Visible
78	30 Second Ave	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.8	0	Not Visible
79	43 Second Ave	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.7	0	Not Visible
80	404 East St	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.8	0	Not Visible
81	20 Elm St	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.7	0	Not Visible
82	380 Broadway	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.9	0	Not Visible
83	382 Broadway	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.9	0	Not Visible
84	416 Broadway	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.9	0	Not Visible
85	428 Broadway	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	3.0	0	Not Visible
86	432 Broadway	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	3.0	0	Not Visible
87	440 Broadway	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	3.0	0	Not Visible
88	460 Washington St	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.9	0	Not Visible
89	550 East St	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	2.9	0	Not Visible
90	472 Broadway	Rensselaer	Rensselaer	Ntl./State Register Eligible	No	3.0	0	Not Visible
91	USS Slater (Destroyer Escort)	Albany	Albany	Ntl./State Register	No	2.6	0	Not Visible
91	Fort Crailo State Historic Site	Rensselaer	Rensselaer	State Park/Historic Site	No	2.7	0	Not Visible
93	Bailey House/Samaritan Shelters	Bethlehem	Albany	Ntl./State Register Eligible	Yes	2.9	50	A
94	Schoonmaker House	Bethlehem	Albany	Ntl./State Register	No	3.4	0	Not Visible
95	Bethlehem Grange No. 137	Bethlehem	Albany	Ntl./State Register	No	4.1	0	Not Visible
96	First Reformed Dutch Church of Bethlehem	Bethlehem	Albany	Ntl./State Register	No	3.9	0	Not Visible

**Table 2 -Visual Resources Inventory – Greenbush to Pleasant Valley Segment**

Map ID	Receptor Name	Municipality	County	Resource Category	Within Project Viewshed	Distance to Nearest Structure (miles)	Maximum Number of Structures Visible	Visibility Class
97	Babcock, Dr. John, House	Bethlehem	Albany	Ntl./State Register	No	4.3	0	Not Visible
98	3 Second St	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
99	76 Main St	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
100	Coeymans Herald Building	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
101	Pape's Store (Brick Row)	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
102	Hotaling Hotel	Coeymans	Albany	Ntl./State Register Eligible	Yes	2.0	Urbanized Area	View Unlikely
103	Structure	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
104	3 Westerlo St	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
105	5 Westerlo St	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
106	10 Westerlo St	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
107	9 Westerlo St	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
108	Frangella House	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
109	80 Main St	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
110	Randio Home	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
111	1518 First St	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
112	W.B. Holmes House	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
113	H Slingerlands House	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
114	Albert Briggs/Fori House	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
115	Colvin House	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
116	Baptist Parsonage/Mrs. Ten Eyck House	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
117	Levi Blaisdell House	Coeymans	Albany	Ntl./State Register Eligible	Yes	2.0	Urbanized Area	View Unlikely
118	Wolf Building	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
119	Structure	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
120	N.H. Johnson/N.J. Briggs House	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
121	P. Seabridge House/Store	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
122	Miss Cronk's House	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
123	62 Westerlo St	Coeymans	Albany	Ntl./State Register Eligible	Yes	2.2	Urbanized Area	View Unlikely
124	Structure	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
125	Structure	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
126	88 Main St	Coeymans	Albany	Ntl./State Register Eligible	Yes	2.0	Urbanized Area	View Unlikely
127	Barber Shop	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
128	92 Main St	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
129	94 Main St	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
130	J.D. Bailey (USPO)	Coeymans	Albany	Ntl./State Register Eligible	Yes	2.0	Urbanized Area	View Unlikely
131	Map Code 23	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
132	J.V. Whitbeck House	Coeymans	Albany	Ntl./State Register Eligible	Yes	2.0	Urbanized Area	View Unlikely
133	Motley Residence	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
134	Wiltsey Building	Coeymans	Albany	Ntl./State Register Eligible	Yes	2.0	Urbanized Area	View Unlikely
135	Brigadier General David McCarty Stone Cottage	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
136	G. Clow House	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
137	L. Zeigler House	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
138	Structure	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
139	Structure	Coeymans	Albany	Ntl./State Register Eligible	Yes	2.0	Urbanized Area	View Unlikely
140	Structure	Coeymans	Albany	Ntl./State Register Eligible	Yes	1.9	Urbanized Area	View Unlikely
141	Van Der Zee Residence	Coeymans	Albany	Ntl./State Register Eligible	Yes	2.0	Urbanized Area	View Unlikely
142	Ten Ecyk Farmhouse	Coeymans	Albany	Ntl./State Register Eligible	Yes	2.0	Urbanized Area	View Unlikely
143	Ten Eyck, Tobias C., House and Cemeteries	Coeymans	Albany	Ntl./State Register	No	3.3	0	Not Visible
144	St. Patrick's Roman Catholic Church Complex	Coeymans	Albany	Ntl./State Register	Yes	2.5	Urbanized Area	View Unlikely

**Table 2 -Visual Resources Inventory – Greenbush to Pleasant Valley Segment**

Map ID	Receptor Name	Municipality	County	Resource Category	Within Project Viewshed	Distance to Nearest Structure (miles)	Maximum Number of Structures Visible	Visibility Class
146	Coeymans-Bronck Stone House	Coeymans	Albany	Ntl./State Register	Yes	1.9	5	No Change
147	Hudson River New Baltimore Waterway Access	New Baltimore	Greene	State Park/Historic Site	Yes	1.7	4	C
148	Bronck Island	New Baltimore	Greene	State Wildlife Mgt Area	No	1.9	0	Not Visible
149	Adams/Whitbeck Residence	Coxsackie	Greene	Ntl./State Register Eligible	Yes	2.4	12	C
150	Van Bergen House	New Baltimore	Greene	Ntl./State Register	Yes	4.4	22	C
151	Bronck-Silvester House	Coxsackie	Greene	Ntl./State Register	No	3.3	0	Not Visible
152	Coxsackie Boat Launch	Coxsackie	Greene	State Park/Historic Site	Yes	2.4	2	C
153	Nutten Hook Tidal Wetland	Stuyvesant	Columbia	State Nature Preserve	Yes	1.3	2	C
154	Structure	Coxsackie	Greene	Ntl./State Register Eligible	No	2.9	0	Not Visible
155	Bronck, Pieter, House	Coxsackie	Greene	Ntl./State Register	No	4.9	0	Not Visible
156	Bronck Farm 13-Sided Barn	Coxsackie	Greene	Ntl./State Register	Yes	4.9	2	C
159	Oak Hill	Livingston	Columbia	Ntl./State Register	No	4.9	0	Not Visible
160	Catskill - Olana (CO) SASS	Greenport	Columbia	SASS	No	3.5	0	Not Visible
161	Rogers Island WMA	Greenport	Columbia	State Wildlife Mgt Area	No	4.2	0	Not Visible
162	Athens Lower Village Historic District	Athens	Greene	Ntl./State Register	Yes	3.6	1	C
163	Zion Lutheran Church	Athens	Greene	Ntl./State Register	No	3.3	0	Not Visible
164	Hudson/Athens Lighthouse	Athens	Greene	Ntl./State Register	No	3.4	0	Not Visible
165	Van Loon, Albertus, House	Athens	Greene	Ntl./State Register	No	3.3	0	Not Visible
166	Stranahan-DelVecchio House	Athens	Greene	Ntl./State Register	No	3.3	0	Not Visible
167	Brick Row Historic District	Athens	Greene	Ntl./State Register	No	3.1	0	Not Visible
168	Athens Boat Launch	Athens	Greene	State Park/Historic Site	No	3.2	0	Not Visible
169	Athens State Boat Launch	Athens	Greene	State Park/Historic Site	No	3.2	0	Not Visible
170	Brandow Point Unique Area	Athens	Greene	State Nature Preserve	No	4.6	0	Not Visible
171	Wiswall, Oliver, House	Greenport	Columbia	Ntl./State Register	No	3.3	0	Not Visible
172	Hudson Boat Launch Site	Hudson	Columbia	State Park/Historic Site	No	2.9	0	Not Visible
173	Hudson State Boat Launch	Hudson	Columbia	State Park/Historic Site	No	2.9	0	Not Visible
174	Middle Ground Flats Unique Area	Athens	Greene	State Nature Preserve	Yes	2.6	1	C
175	Conservation Easement	Greenport	Columbia	Conservation Easement	No	3.7	0	Not Visible
176	Stockport Flats Tidal Wetland	Livingston	Columbia	State Nature Preserve	No	4.5	0	Not Visible
177	Olana State Historic Site	Greenport	Columbia	State Park/Historic Site	Yes	3.5	12	C
178	Teviotdale	Livingston	Columbia	Ntl./State Register	Yes	4.3	1	C
179	Richmond Hill	Livingston	Columbia	Ntl./State Register	Yes	2.1	53	C
180	Saint Paul's (Zion) Evangelical Lutheran Church	Red Hook	Dutchess	Ntl./State Register	Yes	4.1	Urbanized Area	View Unlikely
181	Elmendorph Inn	Red Hook	Dutchess	Ntl./State Register	No	3.9	0	Not Visible
182	Heermance Farmhouse	Red Hook	Dutchess	Ntl./State Register	Yes	3.6	10	C
183	Halfway Diner	Red Hook	Dutchess	Ntl./State Register	No	3.9	0	Not Visible
184	Maizefield	Red Hook	Dutchess	Ntl./State Register	Yes	4.3	Urbanized Area	View Unlikely
185	Grove, The	Rhinebeck	Dutchess	Ntl./State Register	No	3.9	0	Not Visible
186	Sipperly Lown Farmhouse	Rhinebeck	Dutchess	Ntl./State Register	No	4.3	0	Not Visible
187	Evangelical Lutheran Church of St. Peter	Rhinebeck	Dutchess	Ntl./State Register	No	4.4	0	Not Visible
188	Traver House	Rhinebeck	Dutchess	Ntl./State Register	No	4.9	0	Not Visible
189	Pilgrim's Progress Road Bridge	Rhinebeck	Dutchess	Ntl./State Register	No	4.0	0	Not Visible
190	Van Vredenburg Farm	Rhinebeck	Dutchess	Ntl./State Register	No	4.0	0	Not Visible
191	Salisbury Turnpike Bridge	Rhinebeck	Dutchess	Ntl./State Register	No	4.0	0	Not Visible
192	Neher-Elseffer House	Rhinebeck	Dutchess	Ntl./State Register	No	4.6	0	Not Visible
193	St. Margaret's Home	Red Hook	Dutchess	Ntl./State Register	No	4.3	0	Not Visible
194	Sands, Robert, Estate	Rhinebeck	Dutchess	Ntl./State Register	No	3.7	0	Not Visible
195	Williams Farm	Rhinebeck	Dutchess	Ntl./State Register	Yes	1.5	1	C

**Table 2 -Visual Resources Inventory – Greenbush to Pleasant Valley Segment**

Map ID	Receptor Name	Municipality	County	Resource Category	Within Project Viewshed	Distance to Nearest Structure (miles)	Maximum Number of Structures Visible	Visibility Class
196	Progue House	Rhinebeck	Dutchess	Ntl./State Register	No	4.2	0	Not Visible
197	Marquardt Farm	Rhinebeck	Dutchess	Ntl./State Register	No	3.7	0	Not Visible
198	Traver, J. E., Farm	Rhinebeck	Dutchess	Ntl./State Register	No	4.1	0	Not Visible
199	Strawberry Hill	Rhinebeck	Dutchess	Ntl./State Register	No	4.3	0	Not Visible
200	Traver, John H., Farm	Rhinebeck	Dutchess	Ntl./State Register	No	3.6	0	Not Visible
201	Pultz Farmhouse	Rhinebeck	Dutchess	Ntl./State Register	No	3.6	0	Not Visible
202	Slate Quarry Road Dutch Barn	Rhinebeck	Dutchess	Ntl./State Register	No	3.1	0	Not Visible
203	St. Paul's Lutheran Church, Parsonage and Cem	Rhinebeck	Dutchess	Ntl./State Register	No	3.6	0	Not Visible
204	Pier, Jan, House	Rhinebeck	Dutchess	Ntl./State Register	No	4.9	0	Not Visible
205	Rock Ledge	Rhinebeck	Dutchess	Ntl./State Register	No	4.7	0	Not Visible
206	Dwelling, ca. 1775	Clinton	Dutchess	Ntl./State Register Eligible	No	0.2	0	Not Visible
207	Crum Elbow Creek Fishing Access	Clinton	Dutchess	State Park/Historic Site	No	3.6	0	Not Visible
208	Crum Elbow Creek Waterway Access	Hyde Park	Dutchess	State Park/Historic Site	No	3.6	0	Not Visible
209	Quaker Lane Farms	Pleasant Valley	Dutchess	Ntl./State Register	Yes	1.1	5	C
210	Abraham Kip House	Hyde Park	Dutchess	Ntl./State Register Eligible	No	2.0	0	Not Visible
211	Bergh-Stoutenburgh House	Hyde Park	Dutchess	Ntl./State Register	No	4.9	0	Not Visible
212	Stoutenburgh, William, House	Hyde Park	Dutchess	Ntl./State Register	No	4.1	0	Not Visible
213	Estates District (ED)	Hyde Park	Dutchess	SASS	No	4.7	0	Not Visible
214	Home of Franklin D. Roosevelt National Historic Site	Hyde Park	Dutchess	Ntl./State Register	No	4.7	0	Not Visible
215	Roosevelt, Eleanor, National Historic Site	Hyde Park	Dutchess	Ntl./State Register	No	2.8	0	Not Visible
216	Hudson River State Hospital, Main Building	Poughkeepsie	Dutchess	Ntl./State Register	No	4.8	0	Not Visible
217	Main Building, Vassar College	Poughkeepsie	Dutchess	Ntl./State Register	No	4.8	0	Not Visible
218	Poughkeepsie Almshouse and City Infirmary	Poughkeepsie	Dutchess	Ntl./State Register	No	4.8	0	Not Visible
219	Clinton House	Poughkeepsie	Dutchess	Ntl./State Register	No	5.0	0	Not Visible
220	Dixon House	Poughkeepsie	Dutchess	Ntl./State Register	No	5.0	0	Not Visible
221	Glebe House	Poughkeepsie	Dutchess	Ntl./State Register	No	4.9	0	Not Visible
222	Mader House	Poughkeepsie	Dutchess	Ntl./State Register	No	4.5	0	Not Visible
223	St. Paul's Episcopal Church	Poughkeepsie	Dutchess	Ntl./State Register	No	5.0	0	Not Visible
224	Smith Metropolitan AME Zion Church	Poughkeepsie	Dutchess	Ntl./State Register	No	4.7	0	Not Visible
225	Roosevelt, Isaac, House	Hyde Park	Dutchess	Ntl./State Register	No	4.9	0	Not Visible
226	Vassar College Observatory	Poughkeepsie	Dutchess	Ntl./State Register	No	4.6	0	Not Visible
227	St. Andrew's Novitiate	Hyde Park	Dutchess	Ntl./State Register	No	4.8	0	Not Visible
228	Guilford Dudley Memorial	Poughkeepsie	Dutchess	Ntl./State Register	Yes	4.5	5	C
229	Quiet Cove Riverfront Park	Poughkeepsie	Dutchess	State Park/Historic Site	No	5.0	0	Not Visible
230	Clinton House	Poughkeepsie	Dutchess	State Park/Historic Site	No	5.0	0	Not Visible
231	Walkway over the Hudson	Poughkeepsie	Dutchess	State Park/Historic Site	No	5.0	0	Not Visible
232	Tousey, Benjamin C., House (The Willows)	Clinton	Dutchess	Ntl./State Register	No	2.6	0	Not Visible
233	Lafayette Multiple Use Area	Milan	Dutchess	State Forest Preserve	No	3.0	0	Not Visible
234	Early 19th c. Frame Double-house	Milan	Dutchess	Ntl./State Register Eligible	No	2.6	0	Not Visible
235	Roeliff Jansenkill Multiple Use Area	Milan	Dutchess	State Forest Preserve	No	3.0	0	Not Visible
236	Roeliff Jansen Kill	Milan	Dutchess	State Designated Trail	No	2.9	0	Not Visible
237	Lake Taghkanic	Taghkanic	Columbia	State Park/Historic Site	Yes	2.7	6	C
238	Best House & Farm	Livingston	Columbia	Ntl./State Register Eligible	Yes	0.4	13	C
239	Revolutionary Trail	Taghkanic	Columbia	State Designated Trail	Yes	2.6	1	C
240	1.5 Story Frame Farmhouse w/ outbuildings	Greenport	Columbia	Ntl./State Register Eligible	Yes	0.4	47	C
241	Frame Federal Style House	Greenport	Columbia	Ntl./State Register Eligible	Yes	0.4	32	C
242	Harder Knitting Mill	Hudson	Columbia	Ntl./State Register Eligible	No	2.0	0	Not Visible
243	Bronson, Dr. Oliver, House and Estate	Hudson	Columbia	Ntl./State Register	No	2.1	0	Not Visible

**Table 2 -Visual Resources Inventory – Greenbush to Pleasant Valley Segment**

Map ID	Receptor Name	Municipality	County	Resource Category	Within Project Viewshed	Distance to Nearest Structure (miles)	Maximum Number of Structures Visible	Visibility Class
244	North Fifth Street, Houses at 37-47	Hudson	Columbia	Ntl./State Register	No	2.2	0	Not Visible
245	Hudson Historic District	Hudson	Columbia	Ntl./State Register	Yes	1.9	Urbanized Area	View Unlikely
246	Gambrel roof stone & brick house	Greenport	Columbia	Ntl./State Register Eligible	Yes	0.4	31	C
247	161 US 9	Greenport	Columbia	Ntl./State Register Eligible	Yes	1.3	27	C
248	Columbia Turnpike: West Tollgate House	Greenport	Columbia	Ntl./State Register	Yes	0.7	47	C
249	Van Ness House	Claverack	Columbia	Ntl./State Register Eligible	Yes	0.9	15	C
250	Miller, Steven, House	Claverack	Columbia	Ntl./State Register	No	1.3	0	Not Visible
251	Porter, Rev.Dr. Elbert, House ("Oakledge")	Claverack	Columbia	Ntl./State Register	Yes	0.8	29	C
252	Ludlow-Van Rensselaer House	Claverack	Columbia	Ntl./State Register	Yes	0.2	7	C
253	Van Rensselaer-Kipp House	Claverack	Columbia	Ntl./State Register Eligible	Yes	0.1	45	C
254	Mellenville Railroad Station	Claverack	Columbia	Ntl./State Register	No	3.7	0	Not Visible
255	Van Alen, Luycas, House	Kinderhook	Columbia	Ntl./State Register	Yes	2.5	14	C
256	Blaisdell, Fletcher, Farm Complex	Coeymans	Albany	Ntl./State Register	Yes	2.3	25	C
257	Elmbrook Farm	Schodack	Columbia	Ntl./State Register	Yes	0.6	11	C
258	Reformed Dutch Church of Claverack	Claverack	Columbia	Ntl./State Register	No	0.9	0	Not Visible
259	St. John's Evangelical Lutheran Church	Livingston	Columbia	Ntl./State Register	Yes	0.8	7	C
260	Front St-Parade Hill-Lower Warren St Historic Dist	Hudson	Columbia	Ntl./State Register	No	2.7	0	Not Visible
261	Coeymans, Ariaanje, House	Coeymans	Albany	Ntl./State Register	Yes	1.9	Urbanized Area	View Unlikely
262	Stuyvesant Falls Mill District	Stuyvesant	Columbia	Ntl./State Register	Yes	0.8	1	C
263	Staats, Joachim, House and Gerrit Staats Ruin	Schodack	Columbia	Ntl./State Register	No	1.3	0	Not Visible
264	Reed Street Historic District	Coxsackie	Greene	Ntl./State Register	Yes	2.4	7	C
265	Van Rensselaer, Jacob Rutsen, House and Mill	Claverack	Columbia	Ntl./State Register	No	2.0	0	Not Visible
266	Bouwerie	Clermont	Columbia	Ntl./State Register	Yes	1.7	18	C
267	Hickory Hill	Clermont	Columbia	Ntl./State Register	No	1.9	0	Not Visible
268	Newcomb--Brown Estate	Pleasant Valley	Dutchess	Ntl./State Register	No	2.9	0	Not Visible
269	Windswept Farm	Clinton	Columbia	Ntl./State Register	Yes	0.3	3	C
270	Van Rensselaer, Henry (Hendrick) I., House	Greenport	Columbia	Ntl./State Register	Yes	0.7	8	C
271	New Baltimore Hamlet Historic District	New Baltimore	Greene	Ntl./State Register	Yes	1.9	22	C
272	Miller, Harmon, House	Claverack	Columbia	Ntl./State Register	Yes	0.8	10	C
273	Felpel, George, House	Claverack	Columbia	Ntl./State Register	No	0.9	0	Not Visible
274	Mesick, Jacob P., House	Claverack	Columbia	Ntl./State Register	No	1.2	0	Not Visible
275	Top Cottage	Hyde Park	Dutchess	Ntl./State Register	No	2.6	0	Not Visible
276	Requa House	Stuyvesant	Columbia	Ntl./State Register	No	0.7	0	Not Visible

**Maximum Number of Structures Visible:**

Urbanized Area: Receptor located in urbanized area and is more than one (1) mile from the nearest project structure. Project views are considered unlikely.

Note: The maximum number of structures visible is based on viewshed analysis alone. The presence of localized vegetation and extended distance may result in fewer structures visible. Field analysis is necessary to confirm actual view potential.

**Visibility Class:**

Not Visible: Screened by intervening landform or vegetation.

View Unlikely: Receptor located in urbanized area more than one mile from nearest proposed structure.

Class "A": No change in extent of visibility. New structures at same height as existing, or shorter than existing.

Class "B": Minor change in visibility. Structures height increase by 10 feet or less.

Class "C": Structure height increase by more than 10 feet Large Change: Structure height increase by more than 10 feet.

As requested by the December 2014 Order, Table summarizes the total number of identified visual resources and the number of affected visual resources by category.

**Table 3 – Visual Resource Summary**

<b>Resource Category</b>	<b>Number of Resources Identified</b>	<b>Number of Resources Affected</b>
National/State Register Site or District	107	27
National/State Register Eligible Site <sup>3</sup>	134	22
State Parks and State Historic Sites	16	5
Heritage Areas	0	0
State Forest Preserve	2	0
National Wildlife Refuges	0	0
State Game Refuges	0	0
State Wildlife Management Areas	3	1
National Natural Landmarks	0	0
National Park Resources (Recreation Areas, Seashores, and Forests)	0	0
National or State Wild, Scenic, or Recreational Rivers	0	0
Designated Scenic Site, Area, Lake, Reservoir or Highway	0	0
Scenic Areas of Statewide Significance	3	1
State or Federally Designated Trails	2	1
Adirondack Park Scenic Vistas	0	0
State Nature and Historic Preserve Areas	5	3
Palisades Park	0	0
Bond Act Properties purchased under Exceptional Beauty or Open Space category	1	0
<b>Total</b>	<b>273<sup>4</sup></b>	<b>60</b>

## 2. Qualitative Impact (Analysis of Visual Contrast)

### a) Photo Simulations

Photo simulations have been prepared from four (4) representative locations along the proposed Knickerbocker to Pleasant Valley corridor. These simulations are provided to compare the typical visual character of the Project with the existing landscape. Photo Simulations are provided in Appendix B.

Field Photography – An experienced visual analyst visited multiple locations along the proposed Knickerbocker to Pleasant Valley route and photographed roadside scenes likely to have an unobstructed view of the proposed Project. Photographs were taken using a single lens reflex (“DSLR”) camera with a lens setting of approximately 50mm (film equivalent) to simulate normal human eyesight relative to scale. The precise coordinates of each photo location were recorded in the field using a handheld global positioning system (GPS) unit.

<sup>3</sup> Of 237 Register Eligible data points identified as being located within the Study Area, 103 were dropped from further analysis because of missing or incomplete address information.

<sup>4</sup> Three receptors were removed from Table 2 as they were found to be invalid or duplicates.

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Photo Simulation Methodology – Photo simulations were developed by superimposing a rendering of a three-dimensional (3D) computer model of the proposed Project into the base photograph taken from each selected viewpoint. The 3D computer model was developed using Autodesk Civil 3D® and 3D Studio Max Design® software. The simulations are based on the proposed transmission line improvements as illustrated in the typical right-of-way cross-sections (contained in the Marcy/Edic to Pleasant Valley Project, Article VII Part A Supplemental Application, Exhibit 5) for the simulated location.

Simulated perspectives (camera views) were matched to the corresponding base photograph for each simulated view by replicating the precise coordinates of the field camera position and the focal length of the camera lens used (e.g. 50mm). Precisely matching these parameters assures scale accuracy between the base photograph and the simulated view. A 3D terrain model was created using digital elevation model (DEM data) to replicate existing local topography. The camera's elevation (Z value) is derived from DEM data plus a six (6) foot offset. The camera's target position was set to match the bearing of the corresponding existing condition photograph. To verify the camera alignment existing elements (e.g. existing transmission structures, vegetation, buildings, etc.) visible within the photograph were digitized from digital orthophotos. Each element was assigned a Z value based on DEM data and then imported to 3D Studio Max. The digitized elements were then aligned with corresponding elements in the photograph by adjusting the camera target.

Once the camera alignment was verified, a to-scale 3D model of the proposed transmission structures and conductors were merged into the model space. The 3D model was constructed in sufficient detail to accurately convey visual character and reveal impacts. Post production editing (i.e., airbrush out portion of transmission towers that fall below or behind foreground topography and vegetation) was completed using Adobe Photoshop software.

## b) Visual Character Analysis

Existing Landscape Character – The proposed Project is located within the Hudson Valley region of New York State. The Knickerbocker to Pleasant Valley transmission corridor generally parallels the east side of the Hudson River approximately two (2) to eight (8) miles inland.

The Study Area has great topographic variety consisting of rolling hills and small ravines interspersed with large open fields, meadows, orchards and woodlands in a predominantly agricultural landscape. The landform consists predominantly of gently rolling uplands at an average of 200 to 400 feet in elevation. The undeveloped areas contain a mixture of woodlands and meadows of diverse vegetation. Scattered throughout is mature woodlands typically covering steep slopes, hilltops, ravines, stream corridors, and other areas historically unsuitable for agricultural use. The woodlands are mature and create a substantial visual contrast to the open fields. While there are some small ponds and streams, water is not a dominant feature in the landscape.

Agriculture is the principal land use, with a mix of tilled fields, pastures, orchards and woodlands. Coinciding with the mix of open field and woodlots is a significant area of secondary growth edge habitat. For the most part, this secondary growth takes the form of hedgerows, wood borders, and old fields.

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Farmsteads are of vernacular architecture and are generally well-maintained. Single family residences are scattered along lightly to moderately traveled roads.

The transmission corridor briefly passes through suburban residential neighborhoods areas southeast of the City of Albany. The Pleasant Valley substation is located in the community of Pleasant Valley approximately five-miles northeast of the City of Poughkeepsie. These population centers include low to medium-density neighborhoods and commercial districts. The Knickerbocker to Pleasant Valley corridor crosses NYS Routes 9H, 23B, 66 and 199, US Route 9, Interstate 90 (Berkshire Spur), US Route 20, as well as numerous County highways and local roadways. The corridor also crosses the Kinderhook Creek, and the Roeliff Jansen Kill.

The proposed Project utilizes the existing 62-mile long ROW. The two existing transmission lines within the ROW include single circuit conductors mounted on 80-foot tall steel lattice frame structures<sup>5</sup>. Other transmission lines share segments of the existing ROW. These include Greenbush to Albany Hydro Associates/Greenbush to Albany Steam (shared 80-foot steel lattice frame towers), Northside to Oakdale (70-foot tall H-frame towers) that extend from the Knickerbocker substation to one-half (1/2) mile on the ROW. The NMPC North Catskill to Milan/Lafarge to Pleasant Valley line is carried on shared 80-foot tall steel lattice frame towers between miles 29.5 to 62. The NMPC Leeds to Pleasant Valley (90-foot tall steel lattice frame towers) and NMPC Athens to Pleasant Valley (90-foot tall steel lattice frame towers) parallel the Knickerbocker to Pleasant Valley line between miles 42 to 48. These structures are illustrated in the Marcy/Edic to Pleasant Valley Project, Article VII Part A Supplemental Application, Exhibit 5.

Within the Study Area existing transmission structures and conductors are commonly visible at road crossings and nearby properties where the existing Knickerbocker to Pleasant Valley transmission corridor crosses open agricultural or brush covered lands. The upper portions of existing transmission structures is occasionally visible above intervening trees where open vistas permit extended views

Qualitative Change in Landscape Character – The proposed Project will replace existing 80-foot tall steel lattice frame structures with 105-foot tall monopole towers. The Project will be visible from all locations that currently view the existing transmission line. The 25-foot height difference represents a noticeable change in visual character. The slender vertical form of the proposed monopole structures is a simpler visual form than the existing lattice frame structures already within view.

The visual character of the proposed Project is substantially consistent with existing energy infrastructure facilities already in view. However, the qualitative change in visual character resulting from the proposed Project would result in a qualitative change class of “B”, as defined in the December 2014 Order<sup>6</sup>.

Next Steps – This summary analysis provides preliminary information regarding the potential visual compatibility of the proposed Project within the regional landscape. Upon selection of a route by the Commission, NEETNY will conduct a supplemental detailed visual study as outlined in the Project's Preliminary Scoping Studies submitted with the Part A Supplemental Application in accordance with the

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<sup>5</sup> 80 feet is the typical tower height. Towers may be shorter or taller depending on local conditions.

<sup>6</sup> A qualitative change of “B” is assigned when structure types are changed with other lines remaining in the ROW (e.g. “lattice replaced by monopole with other lattice facilities remaining on ROW”).

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New York State Department of Environmental Conservation (NYSDEC) Visual Policy goals (NYSDEC 2000). The results of the supplemental visual studies will be summarized in the Part B.

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## C. MITIGATION MEASURES

Although existing transmission structures are visible within the ROW, additional measures may be implemented to minimize visibility and perceived impact of the proposed structures. Strategies to be considered and further evaluated in subsequent studies include:

1. Professional Design
  - > Locate proposed structures as close to the existing structures as possible.
2. Screening
  - > Vegetative clearing will be in accordance with best management practices (BMP) for safety and operational requirements. Vegetation clearing should be kept to a minimum, where possible, yet not impede operation.
3. Camouflage/Disguise and Alternate Technologies
  - > Alternate color selection for proposed structures could blend with the natural landscape in select locations.
4. Non-specular Materials
  - > Where possible, non-specular conductor material should be considered.
5. Lighting
  - > Design measures should be investigated to minimize light trespass beyond the substation fence while still satisfying the needs of personnel safety and security of the station.
6. Maintenance
  - > A vegetative management plan should allow, where possible, slow growth and low vegetation to be established within the ROW limits.

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Appendix A  
**Viewshed Mapping**

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Appendix B  
**Photographic Simulations**